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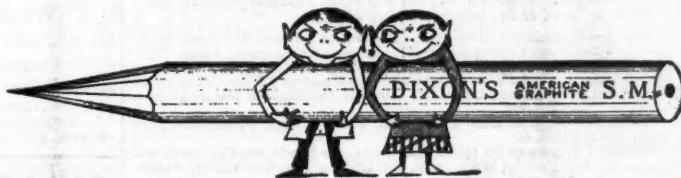
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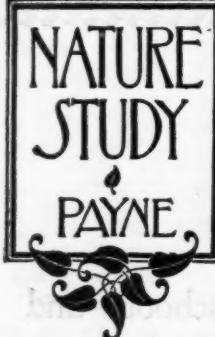
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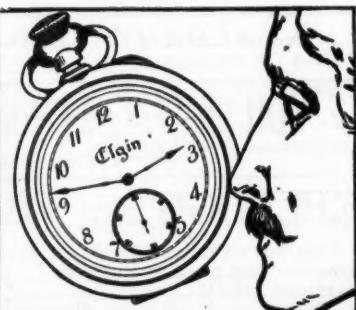
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Self-Activity in Education.

Implications and Applications of this Principle.*

By ARNOLD THOMPKINS, Professor of Pedagogy, University of Illinois.

The impressive lesson from the history of thought is that the human mind can find no peace except in search for the ultimate unity and reality of the universe. This unity, as discerned from afar by the eye of faith in religion, and established by reason in art, science, and philosophy, is the ultimate goal of man's earthly endeavor. All processes of thought, from sense-perception to reason, are but processes of establishing unity in and thru diversity—are but modes of satisfying the craving of the soul for touch with ultimate reality—with the life that binds the seemingly chaotic world into orderly system.

The teacher's world is no less a world of diversity to be ordered into the unity of a single life principle. There are so many details and duties, even within the limits of a daily program ; and when the entire scope of education is considered—its aim, processes, and instrumentalities—the whole to be unified is co-extensive with the world of thought and reality. Here, as elsewhere, the desire for unity is the impulse to thought—for unity of the infinite diversity in the educative process. All educational discussions are based on the assumption and prompted by the faith that there is a unifying principle which organizes and systematizes the distracting variety of details in the processes of education.

Is There One Fundamental Educational Principle?

But, while in such discussions there is tacit recognition of the unity of the educative process, there is generally lacking the firm conviction that the complex process of education can be reduced to the unity of a single principle. Even Rosenkranz, in the introduction to his "Philosophy of Education," affirms that "The science of education cannot be deduced from a single principle with such strictness as logic, ethics, and like sciences," but that "It is rather a mixed science, having its presuppositions in many others ;" and that "Education is capable of no such exact definitions of its principles as other sciences." And at the present I see it emphasized that education is an applied science, in the sense that it is formed by the application of other sciences ; thus implying that it has no germinant idea of its own.

Certainly education avails itself of all the other sciences, as these do of it ; but the science of education goes forth in its own right and organizes all the sciences from its own creative center. It has its own single, central principle, which orders all the details of the complex process into a unified and harmonious whole ; and this principle is self-activity. The science of education must show how the whole process is implied in this principle, while the art of education is but the application of the principle thus implied. Since this principle is a universal one its application yields a philosophy of education rather than a science. How it does this will best appear under the threefold aspect of the principle as it distinctly appears in the process of education.

Tension Between the Real and the Ideal.

1. This principle appears primarily as tension between the Real and the Ideal—the Actual and the Potential.

* Address delivered before the Department of Superintendence at Columbus.

Since the universe is alive and not dead, moving and not fixed, this principle is universal. We live in a seeking, searching, surging world. There is constant striving for that which does not yet appear. Every object has a dual nature—something within it which tends to destroy its present form of existence and bring it near to the reality of the nature which constitutes it. Anything imposes limitations upon itself which the thing will not rest under. The hills, rock-ribbed and ancient as the sun, the planets, and the infinite hosts of heaven are ever seeking new conditions thru the infinite of space and time.

In the organic world stress, thru duality of nature is unmistakable. The plant or the animal is moved to self-realization by a resident force. In each case the object is in self-struggle. An organic thing is organic by virtue of the stress between its actual and its potential nature,—by virtue of the relation between the real and the ideal which constitutes its nature. The ideal is ever striving for its freedom in the real—to become itself the real.

Man emerges out of the lower order of beings on becoming conscious of the duality of his nature ; of the divergence between his real and his ideal self ; between what he is and what he ought to be. He can lay hold upon his better self, and by conscious plan and purpose aid in his own self-realization. He knows that what he really is by virtue of his manhood ; and, feeling this discrepancy, he is consciously self-moved to realize his implicit manhood. Conscious self-activity is the ultimate retreat of self-consciousness, and from this single truth springs everything within the realm of human thought and action.

Herein is involved the whole of the religious life. Coming to consciousness of the better self is the second birth of the soul. Truly man must be born again in order simply to be a man ; and the whole of his life is but a succession of new births, in each of which man discerns deeper realities in his own soul. Herein man discovers God. "Religion is the life of God in the soul of man."

In the conscious relation of the two selves lies the fact of sin and redemption. From this relation arises the possibility of man's going to heaven or hell. One not accustomed to think on this fact of self-consciousness will be surprised to find that all the doctrines of the Bible are explained in it ; and more, that it is this simple truth which has shaped the world's great religions. The Protestant Reformation was but a clearer recognition of the voice of the better self. This was the simple principle that dethroned kings and gave us democracy. To secure the rule of the better self is the desideratum of all governments. And so all moral duties are determined by the relation of the present, real self to the ideal self. Out of this comes conscience, duty, responsibility, obligation, and the rest. Man's duty is simple ; he ought to be what he is ; that is, what he is by virtue of being a man. If he is really a devil he can do no better than to play the game well.

The Stress for Self-Realization.

In education this principle determines the end to be that of self-realization ; the realization of the better self. Man is the product of his own educative process. Education cannot be ultimately tested in any form of external product ; as, in what a man has or knows, but in what he is ; thus making culture, in the true sense, the final aim. Nations have taken two views of the meaning of educa-

tion ; regarding it either as a means or as an end. The history of education can, therefore, be read only in the terms of the relation under question.

Not only the aim but the method of education is thus determined. At every stroke of the teacher some present stress must be released, and some new ideal born ; some new stress set up. The art of teaching consists at bottom in discerning the present stress of the life to be educated and transform it into a higher one. The whole question of interest lies here. A child is always interested, and interested in something worthy. The teacher is not so much to induce interest as to mediate it. To educate is to move the life onward and upward under the stress of ideals. The fundamental thought of method in education is this of the ideal passing into the real, that a new ideal may be revealed, which in turn becomes real. The perfection of character sought in education is not an end to be attained, but an infinite progression by mediating ideals.

Wherever teaching is found to be dead it is because the teacher strives to induce action from without, instead of utilizing the self-activity of the pupil. Witness, for example, the dire distress of the teacher in striving to secure oral or written expression from the pupil when there is no inner motive to expression !

Thus interest expresses the tension between the real and the ideal in life ; while that other great word, apperception, expresses the passing of the ideal into the real, on the basis of its relation to the real. In the same way must be explained those other current terms of correlation and concentration. Each subject of study is but a construction of the world under a given tension of life. Subjects have no external fixed boundaries, thus becoming mutually exclusive. The failure to recognize this truth is a never failing source of trouble, causing the teacher to resort to all sorts of schemes to correlate subjects and parts of subjects.

For instance, man considered in effort to realize himself thru his physical environment, in the form of the industrial world, forms geography ; and when more fully specialized the sciences. The field is limited only by what is required to this end ; there is no objective limit, and no matter reserved for the use of any other subject. History is formed by viewing man in effort to realize himself by means of his fellow man thru institutions. For its purpose it may use all the material gone over by geography. Number arises from man's effort to adjust accurately and economically to some ideal end ; and is thus a process of self-realization. Grammar, in treating the sentence, exhibits man in the explicit act of passing from his real to his ideal self, inasmuch as the subject of every sentence expresses man's real self and the predicate his ideal ; while the verb expresses the tension between the two. Literature has for its direct purpose the revelation of the ideal self in the real. Thus every subject is born of some phase of the life tension ; some outgoing effort to self-realization. It is just this living and determining factor that gives the clue to the teaching of every subject ; so reveals its inner life and organization as to insure vital teaching as against mechanical teaching.

And when we pass to the school as the organized instrument of education we discern the same germinant principle. All institutions are but projections of the ideal self in an objective form as a means to making the ideal real. Man, being conscious of himself, can be teacher to himself as pupil. The teacher and pupil relation is first a subjective one. The teacher is the pupil's own ideal adopted as more efficient means of the pupil's development. From this center the whole question of school organization and management arises. There can be no successful school management without recognition of this fact.

Tension Between Subject and Object.

2. In the process of education this principle of self-activity assumes a second form—tension between Subject and Object.

In the process of self-realization man does not simply

hold his ideal in consciousness, but forgets himself in the objective world. The law of self-realization, as disclosed above, is by the law of self-sacrifice. Altruism is the method of egoism.

Everything lives in and thru another. Man intuitively feels that his life is found in the world about him ; he is instinctively drawn to that world. This is explained by the fact that every self is the organic unity between this self and the other self. If at this moment one should say I, and then read some poem not before read, the old I becomes a new one, which includes the poem. And thus with any other object of thought. What before appeared as tension between the real and the ideal now appears as tension between subject and object. The ideal which the mind seeks is the thought and the spirit of the world which is objective to it. Subject and object implies a self-active principle which differentiates itself into the polarity of this and the other.

Enlargement of the Self.

And here we have a new aspect of the germinant principle of education. All thought is to cancel the distinction between the subject—the real self—and the object—the ideal self ; and the motive in the process is to break down the limitations which the object imposes on the subject. Subjects of study are so many enlargements of the self. These are taught that the pupil may have life and that more abundantly. Knowledge is the means by which the finite self passes toward the infinite self. The pupil masters a subject and may say I am that subject ; and that, and that ; and if he could master all he could exclaim with Jehovah, I am !

Not only the motive, but the problem of method lies in the connection between subject and object. The mind and its object must be reduced to common terms. The objective process in things must be seen as the subjective process in thought. The precept, the concept, the judgment, and the syllogism are but processes of unity between the subject and the object ; and no intelligent discussion of these can be made except by recognizing them as common processes of subject and object. If, by reasoning, for instance, one forms from the nature of an orange that all oranges are yellow, it is because the oranges themselves form their yellow in the same way. The process of reducing a compound to a simple fraction is the process of the fraction itself. Thus the problem of method in teaching is the problem of reducing the learner and the object to be learned to a common process—to a unity of life.

Tension Between Universal and Individual.

3. But in the process of teaching this principle takes a third and final form ; namely, tension between the universal and the individual, or between the creative energy and its object.

What the student is immediately striving for is the unity of the world of isolated objects. But he cannot establish this unity by directly relating them. Things are unified thru their common creative energy. Oak trees are not primarily united in space, but in an oak nature (energy) which produces them. The energy which produces one produces another, etc. Events are unified in a common life below them, as implied in the word event. Hence, the unity sought is the unity of the object with its nature, or productive energy. In every act or thought the object is divided into its individual and its universal aspects. Thinking is relating ; and the relation sought is always the two aspects of the object as above indicated. This is the simple but universal law of thought.

Three Aspects of one Life Principle.

But note the real object of this vital process of thought. It was stated in discussing the tension between subject and object that the purpose of thought is to bring the thinker into unity with the object thought. This can be done only by the thinker discerning the creative energy of the object. On this ground only can they meet. On the plane of sense perception there seems to be an impassable gulf between the thinker and the object. This separation grows less and less as the higher processes of

thought are exercised. In fact such processes are higher just because they bring the thinker to closer unity with the object thought. The thinker must find himself in the object, but this is just the self-active principle in the object. The thinker craves the reinforcement of the object's inner life, and is thus prompted to search out its genetic principle.

It thus appears that tension between the object and its creative energy is one with the tension between the real and the ideal, described at the outset. Thus the circle is complete. The three tensions are but so many aspects of one life movement. These three aspects of the principle of self-activity determine all phases and processes of school work, fix the aim, determine the methods, construct the course of study, and organize and manage the school.

And, what is of the greatest significance, the following of this principle brings all school work into conscious and organic relation to every other educational force—the church, the state, etc. All move under the same principle to the same end—the full realization of all the beauty and worth implicit in human nature.

Effects of Teaching on the Teacher.

By MARY HALL LEONARD.

The reactionary effects of any work upon the worker form the best test of its worth. Such effects are not far to seek in any calling. It is often remarked of a body of teachers, that they carry the marks of their profession in plain view. But the same may be said of a company of ministers, farmers, artists, athletes, or persons engaged in literary or business labor. And it ought to be so. If the marks of the profession were not stamped in a general way upon the company, it would seem to show that the profession itself had never become a serious pursuit, to be engaged in with devotion and built up in its special principles and methods by the united effort of its votaries.

These effects are various. They may be physical, social, intellectual, or moral. The calling itself must dominate to some extent the habits of the individual, his status in society, his pecuniary means, his opportunities for culture, his friendships, tastes, and interests. Yet in all these lines, while there are general tendencies that are likely to be developed, the specific result may be either good or bad. Which it shall be, lies largely within the power of the person himself to determine.

The Teacher's Associations.

The teacher's work forbids to some extent engagement in what are called "social functions." Will this make the teacher lose interest in social matters,—unable to talk on subjects of general interest? Or will it but serve to save him from the temptations and follies of social excesses, and enhance his pleasure and vivacity on the rare occasions when he can yield to social claims?

The teacher's limited purse forbids costly dress and expensive pleasures. Will this make her regardless of personal appearance, or lead her to sacrifice the useful for the ornamental in matters of dress? Or will it stimulate her to a wise study of conditions so as to be able to dress suitably and tastefully with a moderate expenditure?

The teacher's work brings him into association chiefly with immature minds. Will this keep him young and fresh in spirit, or will it lead him to assume always the position of mentor and critic, of one more ready to teach than apt to learn in life's experience?

The teacher's work calls for firmness of discipline. Will it make him dictatorial and arbitrary, or will it simply give steadiness to one's wayward impulses, and the power of leadership in the presence of weaker minds?

The teacher's work often obliges him to conform his individual ideals to the requirements of "a system." Does this lead him to exalt unduly the value of technicalities? Does it give rise to frictions with the heads of the organization, and with its other workers?

Or does it help the teacher to learn the valuable art of working in harmony with others, while still remaining true to individual convictions; of conforming to requirements imposed by authority, and at the same time influencing or directing the shape of those requirements?

Just as plants of various natures planted in the same soil absorb varying elements into their own growth, so each teacher lives out the answer to these questions in his own individual way.

Young Hearts.

There are in active service in our school-rooms, many teachers who have seen long years of school-room labor. Some of these are the thorn in the flesh to school officers who feel that they are on the retrograde as teachers, yet who shrink from the obloquy and opposition that their removal would arouse.

But there are very many of these older workers who have kept their hearts young, and their motives fresh and inspiring; who have learned by well-studied experiences how to master the kinds of trials that are likely to occur in the school-room, and whose retirement from the service would give genuine regret to pupils, fellow-teachers, and school-boards alike.

The effect which teaching will have upon the teacher is largely a question of the motives for which it is pursued. If these motives are low, special lines of deterioration in the teacher's own mind and life may be looked-for as the natural and unavoidable result. But if the motives for teaching are worthy, a special line of virtues leading to higher usefulness, is likely to be developed.

To such teachers there is no danger of reaching the "dead-line."

Music: Its Nature and Influence.*

By WILLIAM L. TOMLINS, New York.

(Continued from last week.)

Several questions suggest themselves which may be briefly considered here.

Can we all be Patti's or Nilssons? Not in the sense of having marvelously gifted voices, but we can be ourselves, and with most of us that will be a great advance on what we are. To illustrate: my face may not have the beauty, the regular features of a Madonna or an Apollo, but it is not therefore denied me to smile in cheeriness of disposition; to encourage, to sympathize; to welcome. So with the voice, lacking uniformity of feature, and the pink and white of pure complexion, still it may ring with acclaim, melt in compassion—express the moods of heart and soul.

The language of song, both giving and receiving, is our common heritage. Compared to it, nationalities are narrow. It assumes the solidarity of the race. But it is with song as with the countenance, beauty of feature is secondary to power of utterance and expression.

A second question arises: If music is so great an agent why are its effects seemingly so brief and transitory?

Patti's hearers were for the time being normal, responsive. And yet, within the hour, they were to be seen crowding out of the concert-hall, jostling one another perhaps, even scrambling for seats in the street cars. Why is the effect not permanent, or at any rate more lasting?

Let us see. How was it half a century or so ago with regard to electricity? About the only electric phenomenon known at that time was the flash of lightning. The midnight, perhaps, black to pitch darkness—a moment's illumination making the whole landscape bright as day, then again pitch darkness. Now look around at the many forms of electrical energy: light, heat, and power, and electricians tell us these are only the beginnings. In like manner may it be in regard to music? As to the

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uses of music, and therein will lie wonderful manifestations, we are at its beginnings, only. As it is, music comes to us with amazing, incomprehensible power, lifting us from the valleys, from the pots and pans of daily toil up to the heights from which life may be viewed in truer perspective. Thus it reveals to us our fuller stature and suggests higher ideals. But it does not leave us there. Setting the standard before our eyes, music says to us : "This is you ; this is the mark of your high calling," and bids live the harmonies we voice in song.

A third question : Why are not musicians more looked up to ? Why are they not more worthy to be looked up to, since music has so noble an influence ? Because music without purpose, music as a frill on the garment of fashion, music as a sort of hypersensitiveness is bereft of its ennobling power.

Music is for All.

To the humble toiler in the fields, he who digs, music should come as fragrance, form, color, melody, harmony, rhythm, making toil sweet and joyous. In these days when the elaborate subdivisions of industry make labor more monotonous, toil loses its interest, making almost for drudgery. It is like so much dead ballast to which art life may come with balloon-like elasticity and buoyancy, lightening the burden. But music without purpose is worse than ballast without balloon elasticity, it is like balloon elasticity *without ballast*; its buoyant vitality becomes mere flightiness—empty of aim, of use.

To separate music from its uses is, as Wagner observes, like taking the fresh and blooming rose and distilling therefrom the otto of roses. Form, color, beauty are destroyed. The glorious petals of the lovely flower become offensive "ding-leams," and the otto of roses, disassociated from its natural environment, is no less a stench and an offence.

(To be continued.)



The Renaissance in Italy.

By ABBIE J. GANNETT, Mass.

Authorities to consult :—Burckhardt, "Civilization of the Renaissance in Italy." Lubke, "History of Art;" Leon Palustre, "L'Architecture de la Renaissance."

Götz, "Architecture of the Renaissance in Italy;" Walter H. Pater, "Studies in the History of the Renaissance;" Fergusson, "History of Modern Art;" John Addington Symonds, "Renaissance in Italy."

See also "Handbook of Architectural Styles" translated from the German of A. Rosengarten, and the Brochure "Series of Architectural Illustrations."

Toward the close of the middle ages many things happened that could not fail to bring about changes in men's ways of thinking, living, and working.

There were the crusades—a series of expeditions and wars lasting thru two centuries—undertaken by the united forces of Western Europe for the purpose of recovering the Holy Land from the Turks. Traveling even on expeditions that fail of their immediate object, and that cost thousands of lives is yet sure to give men wider range of vision.



Fig. 1—Hall of Stuccos, Pitti Palace.

In the fourteenth century the mariner's compass was introduced into Europe and men began timidly to venture farther on the sea, until at length one bold navigator whom we all know, found the shores of a new world.

About the same time that the compass came into use, people discovered how to make paper out of linen rags, and when a little later the art of printing was invented, the printed book—another powerful factor in the history of civilization—became common.

About the middle of the fifteenth century (1453) Constantinople was conquered by the Turks and many Greek scholars and philosophers took refuge in the cities of

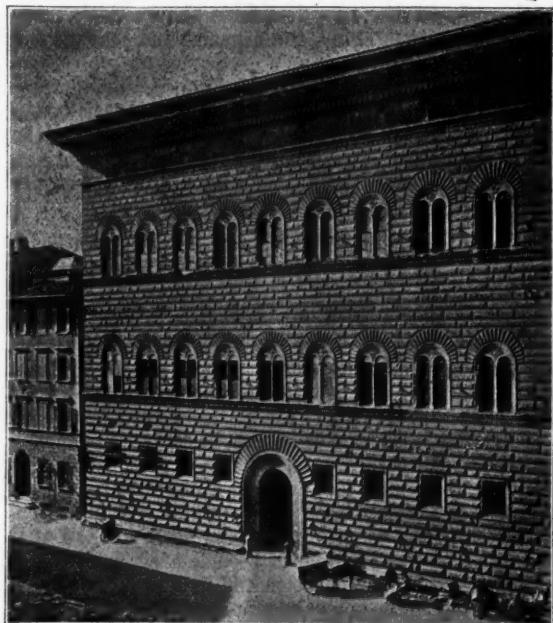


Fig. 2.—Palazzo Strozzi, by Benedetti da Majano.

Western Europe. The days in which the clergy represented whatever learning there was, were vanishing into the past.

The Italian Cities.

In the general waking up to new intellectual activity which marks the beginning of modern history, Italy was pre-eminent. The reasons for this pre-eminence may throw a side light on the subject in hand.

The Italian cities had, long before the close of the middle ages, secured their independence and became small, separate republics. They were very prosperous republics, too. Venice, for example, had in the time of the crusades built ships to take the knights to Palestine and opened an extensive trade with the East which soon made her rich.

Florence took up silk manufacture. Milan made her fields the most fertile in Europe by bringing to them thru a plain thirty miles long, water from the Ticino river. The cultivation of the mulberry tree was required by law. Genoa and Pisa became important ports for commerce. Thruout Italy the cities thrived.

Interest in Classics Revived.

In their prosperity, the people of Italy began to think more of their history, with a pride in the past to which their strain of Roman blood gave them some claim. It became the fashion to recall the splendid days of Rome in many ways. Children were given old Latin names. Long forgotten manuscripts in Greek and Latin were brought to light and studied with such enthusiasm that our school programs bear marks of it yet. Once Florence settled a difficulty with Naples by giving to that city the finest copy of Virgil she had ! In such esteem were the old writers held.

The revived interest in classic history and literature soon extended to art. The remains of Grecian and Roman works began to be studied with new perception of their merit.

The grand and solemn beauty of the Gothic style had always seemed oppressive to southern builders. It was the expression of the intense religious feeling of a people of different temperament. It is easy to see that the free pleasure-loving Italians of the fifteenth century, with riches at command with ancient models at hand, must needs be the first to throw aside what had never been to their taste and to turn comfortably to the lines of the old builders.

Renaissance Defined.

One writer has very aptly called the Renaissance "the outbreak of the human spirit." The term means literally,

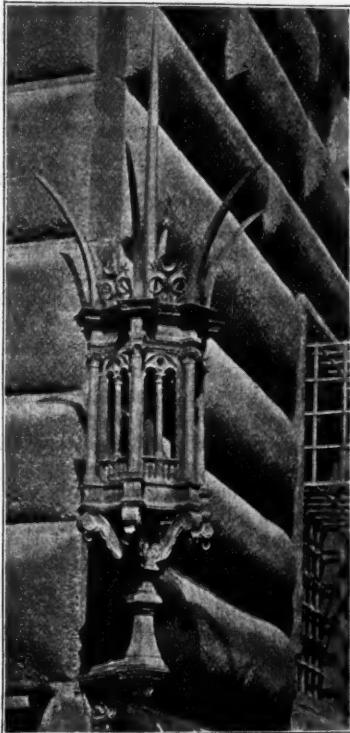


Fig. 3.—Wrought iron lamp holder on corner of Palazzo Strozzi, often used as a model.

rebirth. It has a variety of applications. As commonly used, it applies to the style of architecture and ornament that grew from the attempt to copy the work of ancient Greece and Rome and adapt it to modern needs. There has been, strictly speaking, no new style since the Gothic. The Renaissance gave new combinations and applications of old lines, orders, and ornament. The letter was old, the spirit new.

The Renaissance began in Italy in the fifteenth century; thence it spread, coming with modifications down to our own time and land. We shall limit ourselves to study of its development in Italy.

Brunelleschi.

Fillippo Brunelleschi—or Brunelleschi, as the name is often written—has been called the father of the art of the Renaissance. He was born in Florence in 1377. From his boyhood he wanted to be an architect. It was his pet ambition to build, in his own city, a dome for the great cathedral, which had been left with unfinished roof for a hundred-fifty years. In 1403 he went to Rome to study the Pantheon—a domed structure you will remember. He worked so hard, measuring and sketching among the old Roman ruins, that the gossips of the time said he must have buried treasure there. Long years he spent in making models of domes at which every one laughed. But by-and-by Florence sent out a call for plans and models of a dome to complete the great cathedral. That was in 1418. Out of the fifteen plans presented by architects of different countries, Brunelleschi's was chosen. So he began his great work, the construction of the largest dome in the world. When he died in 1444, it was not en-

tirely finished, but so nearly that others could easily carry out his plans.

There is a statue of Brunelleschi now on one side the piazza of the cathedral in Florence. He is represented sitting with his plans spread upon his lap, and he is looking away from them up to the noble dome he so much desired to build.

Palazzo Pitti.

The Pitti Palace, now famous for its picture gallery, was the work of the same master. It is the typical palace of the Florentine Renaissance, and spite of its four hundred years is said to be still the finest of all European palaces. The effect of its severe exterior could not be pleasing in a smaller building; but this palace is 490 ft. long and each story is 41 ft. high, and the bold severity is grand. Its appearance of massive strength reminds one that it was built in days when a man's house must be a fortress too. Long horizontal lines mark each story, the low roof and the round-arched windows. The round arches were, you remember, "the chief trophies" of Roman art. The architects of the Renaissance often took individual ancient forms and used them, not because necessary in construction, but as desirable for decorative effect. The pediments for windows we first saw as necessary parts in the front of a Greek temple. The Romans had used the form in making niches for statues—and here it becomes a sort of window decoration.

Fig. 1 gives a glimpse into one of the halls of the Pitti Palace.

Other Examples.

Fig. 2 shows a picture of the Strozzi Palace—a noble example of a little later time. It was begun in 1498, the same year that Columbus reached the main land of our continent. In those days Florence was the home of many artists, and the rich nobles, each trying to have his own palace and surroundings the finest and most artistic of all, were liberal patrons.

The entire facade of Palazzo Strozzi is of the rustic work so much liked by the Italians. It is of rough blocks of stone dressed only at the joinings. Notice the mulioned windows and the heavy cornice. A marked feature of the palaces of this period especially in Florence, is the boldly projecting cornice proportioned to the height of the entire building. It bears a general resemblance to the entablature of the triumphal arches of old Roman days.

There are many other examples of Renaissance architecture in Florence that one would like to see:—the churches of San Lorenzo and San Spirito, both by Brunelleschi; and palaces built from designs of such famous masters as Alberti, Bramante, Raphael, and Michael Angelo. Some of these you know, perhaps, as painters or sculptors, but they were architects as well.

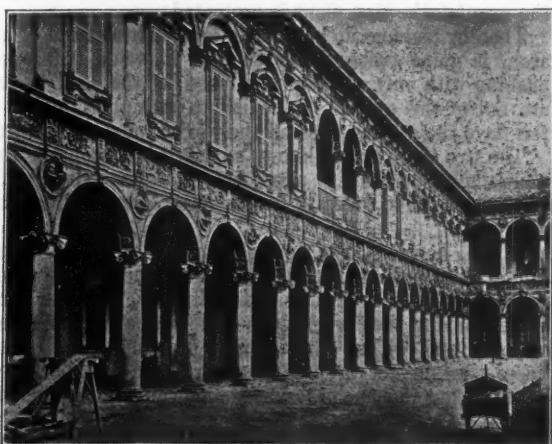


Fig. 4.—Great Court of Hospital at Milan, by Bramante.

Open Courts.

We must not fail to note in our study, the court—

always a principal feature of an Italian palace. Some of the courts were enclosed on four sides; some on three sides only. Fig. 4 shows the great court of the hospital at Milan, said to be the finest thing of its kind in Italy. It was designed by Bramante of whose work we shall speak further by-and-by. The open arcades of the lower story with the airy apartments over them are delightful in a southern climate.

(To be continued.)



Study of Germination.

By LILLIE C. FLINT, Minn.

The two conditions necessary for germination are heat and moisture. When the seed is placed in the ground the first change noticed is the swelling on one side. Soon after this the radicle is seen to protrude thru an irregular torn place in the seeds' coats.

Seeds have two parts, the seed coats which consist of a thin skin over the outside, and the inner portion, which subsequently develops into the seed leaves. The tiny oval shaped mark, seen on the inner side of seeds and which is the place of attachment to the pod, is called the hilum.

The swelling and consequent enlargement of the radicle causes the breaking of the seed coats, and the radicle then commences to make its way toward the center of the earth. The great aid to this is the attraction of gravitation which starts the radicle in the right direction. If the seed be laid on damp sand it will be plainly seen that the tiny tip of the radicle is constantly moving, in a circle, and this aids it in penetrating the earth.

A short time after the radicle appears, an arch comes from between the seed leaves. This gradually straightens until the two tiny leaves between the seed leaves stand erect. There are four parts to an ordinary plant. The cotyledons or seed leaves, the stem immediately above them, the plumule, and the part below, the radicle, which can be distinguished from the root by the presence of root hairs.

Most seeds get covered up in some manner. They fall into holes or crevices in the earth, or into burrows of insects and are covered up by dirt and leaves so that when the radicle starts, the covering presses on the seed so that it gets a purchase, thus making it easier to make its way down into the earth.

If many seeds are planted, it will be seen that all those having two seed leaves come up in the form of an arch. There are good reasons for this. In the first place, the tiny plumule with the delicate leaves lies between the cotyledons, and if it came up in any other way, or straight, the particles of earth and small stones would fall on it and injure the young plant. But by coming up in the form of an arch till the part below the plumule is above the ground, the tiny plant is protected.

Then by coming up with two legs in the form of an arch, it gains twice the force that it would if it were pushing with only one leg. As soon as the seed leaves are out of the ground, it begins to straighten and in a few days the one leg does all the work of pushing upward.

The two large leaves known as cotyledons contain the nourishment of the tiny plant, before it has gained sufficient strength to take its nourishment directly from the ground.

When, however, the nourishment in the tiny storehouses has been exhausted, the plant has gained force enough to take its nourishment directly, and the seed leaves, having their work done and the substance taken up, dry and wither away, finally dropping off. In all cases they do not drop after their office has been exhausted, but in some cases, as the morning glory, remain on the stalk and perform the office of leaves.

In plants having but one seed leaf, or monocotyledons, they do not come up in the form of an arch. The tiny point of the plants belonging to the grass and grain families, are well fitted to pierce their way up to the light without injuring the young plant, for they pass between the tiny spaces that are between the particles of earth.

The various members of the gourd family have a curious contrivance to aid in pushing off the seed coats. A heel or peg is grown on one side of the radicle, just as it comes from the seed coats. This holds the lower half of the seed coats, the radicle being fixed firmly in the ground, while the continued growth of the arched part of the plant, tears asunder the seed coats and the cotyledons are easily withdrawn.

If we plant a great number of seeds we shall see that they always come up with the seed coats pushed off, for where this peg has been prevented from acting the seed leaves came up with the seed coats still on. While the coats are on, the cotyledons are shut off from light and carbonic acid gas, but no one would have thought that the advantage gained by the casting off of the seed coats a little earlier, would have tended to develop a special contrivance for this purpose.

When the peg has been prevented from acting, the plants are inferior to those that have been allowed to cast off their seed coats with the peg. This peg is developed with extraordinary rapidity, for it grows in a day. It grows sometimes on the tiny radicle and sometimes down where there are little roots. It always comes on the side toward which the broad flat seed lies, for it would be of no service if it were anywhere else.

The peg does not rest on the outside of the flat tip, but is inserted between the two parts like a wedge. So that as the arched part grows upward it tends to draw up the whole seed, and by this means the peg holds the lower half of the seed coats down. The peg acts in co-ordination with the position which the broad flat seed would naturally occupy. To this family belong the cucumbers, squashes, pumpkins, melons, and gourds, and this peg is readily observed in all of them.

There is another plant belonging to the bean family which has a peculiar manner of germination. The plumule instead of coming up between the seed leaves grows thru a slit in the radicle, into which the nourishment of the seed has been previously sucked. The long bulbous radicle extends to one side of the seed and out from it.

In the case of bulbs, the earth is broken by the cone shaped form of the combined mass of the leaves, giving them strength enough to break thru.



Cotyledons often emerge from the ground still tightly enclosed within the seed coats, which apparently serve to protect them. The seed coats are afterward ruptured and cast off by the swelling of the closely joined cotyledons, and not by any movement or their separation from one another.

The tip of the radicle is the directing power of a plant. In it lie sensitivity to any obstacle in the soil and moisture. If the tip of the root come in contact with anything in the soil, it immediately turns so as to avoid the obstacle. But gravitation is acting at the same time and as soon as the root has passed the obstacle, gravitation again takes hold of it and it goes on in its downward course. Tips also turn toward moisture in the soil, and toward the part in which there is the most moisture. This may account for the fact that drain pipes are often filled with masses of roots. If the earth is a little less hard on one side than on the other, the tip of the radicle will turn in that direction and follow the line of the least resistance.

In the grains the summit of the sharp single seed leaf is protected by an aggregation of strong cells making a hard crest. This gives it greater strength and serves the purpose of breaking thru the earth.

Suggestions for Study of Germination.

Plant beans, corn, sunflower seeds, morning glory seeds

and also wheat and oats. Have the child describe the plant he has observed. If planted on cotton in glass and kept in a temperature of about 60 degrees, germination will begin and go on rapidly and the glass and cotton will render it easily observable.

Looks before soaking.

Looks after soaking.

How it begins to grow.

How it comes up and why it comes up this way.

Full description of the cotyledons.

Use and what becomes of the cotyledons in different plants.

Comparison of and color in different plants. First leaves as to color, size, shape, venation, and margin.

Introductory Lesson on Plant Life.

By ELLA K. JELLIFFE.

(Given in the seventh primary grade of a Brooklyn, N. Y., school.)

As I was coming to school this morning, I heard the wind whispering to the trees, trying to wake them up, for don't you know that they have been asleep a long time—ever since the leaves left them in the fall? Do you not think that the trees were sorry when all their leaf-children flew away from them? I do, for they have looked so bare and lonely ever since, and some of them have hung their heads at times as if they were weeping; but He who takes care of us when we are asleep (as well as when we are awake) takes care of the trees, too. In winter the snow comes, and it is a soft, warm blanket to cover up their shivering limbs. Then the rain comes to give them drink, for they are dry and feverish and they are so grateful for the cool rain. After the rain comes the sunshine—it is food for the trees; they stir a little and seem to feel the warmth all thru them.

The Trees Awaken.

As spring comes on, the blue sky looks down so kindly on the awakening trees, smiling at them as they half open their eyes. The little, hardy birds that stayed with us all winter, while their more delicate brothers and sisters flew away south to warmer countries, build their nests in the branches of the budding trees (You saw them, did you, James? Well, don't touch them, will you?); and they, twitter and sing and call to the trees to hurry and wake up and get dressed, and they promise the trees that they shall see all their little leaf children again and be happy and gay once more. And by and by, in a few weeks, if you keep your eyes open you will see these poor, bare trees all beautifully dressed in the most delicate green, and looking so happy and bright that you will scarcely know them.

Now I'm going to let you tell me what you know about trees. I hope you have a great many friends among them and know their names. Yes, an oak tree, so grand and shady! What does it grow from? Yes, a tiny little acorn. Tell me some things that grow on trees, can you? Oranges, apples, peaches, pears, and nuts. Yes, that's right. No, not grapes—they grow on vines.

You have been in an orchard, Charles? What is an orchard? Yes, a place where a great many fruit trees grow. They may be all apple trees or all peach trees or they may be fruit trees of different kinds. You would like to see an orange orchard, would you, Allan? Well, I wish you might see an orange grove—such a delightful place. But you would have to go to a warmer climate than ours to find one.

I am going to let each one draw a picture of a tree for me, and then I will read you a poem about trees. You may draw the trees as they look now or you may put on their summer dress as you remember it. Gilbert, give out the drawing paper,

please. Oh! and so you have climbed a cherry tree, Harry? Well, you are a brave boy.

Well, Le Roy, you may put your picture on the blackboard and let the boys see your apple tree. You, too, Clarence, may draw yours on the blackboard, for I like your tree, it looks so strong and the trunk looks really as if it were covered with bark. Why, you have made all the boys laugh by adding that ladder with the little boy on it. He must be going for some of those apples you have drawn on the tree.

Now listen while I read you about the orchards:

"Along the orchard's fragrant way
I walked in flower embroidered May;
The apple trees were all alike
With opening buds of rose and white.

"On the same path I pass again,
The faded grass is wet with rain;
The sweet young year is growing old,
My flowers are changed to globes of gold.

"Within the polished spheres there be
Rare honey and rich spicerie;
From sun and wind and blossom-bell,
The patient days have wrought the spell."

Yes, you told me before that apples were the shape of spheres and that's the way they grow on the trees. The sun and the rain first bring out the beautiful pink and white blossoms and when they fall off, the apples come—little hard green things at first, but more sun and more rain, day after day, make them golden and ripe. Don't pick many blossoms, boys—pretty as they are—because you may destroy the fruit that comes from them.

Boys, say this after me:

Be Kind.

"Kind hearts are the gardens,
Kind thoughts are the roots,
Kind words are the blossoms,
Kind deeds are the fruits."

The last thing I want to say to you to-day about trees is this: Be tender to them, for they are alive and you must not break them, or bark them but take care of them and help them to grow. I remember a tree in the country where I go in the summer; I have often sat under its shade, and it was planted by a little boy thirty years ago. It is a black walnut tree and he planted the nut from which it grew. As he came to be a man, the tree grew to be a large, strong tree and he was very proud of it.

This Beautiful World.

You have listened and answered so nicely that I will read you another poem about our lovely world:

"Great, wide, beautiful, wonderful world,
With the wonderful water round you curled,
And the wonderful grass upon your breast;
World, you are beautifully drest!"

"The wonderful air is over me,
And the wonderful wind is shaking the tree;
It walks on the waters, and whirls the mills,
And talks to itself on the tops of the hills."

"You, friendly earth, how far do you go,
With the wheat fields that nod, and the rivers that flow,
With cities and gardens, and cliffs, and isles,
And people upon you for thousands of miles?"

Ah, you are so great, and I am so small,
I tremble to think of you, world, at all;
And yet, when I said my prayers to-day,
A whisper inside me seemed to say,
You are more than the earth, tho' you are such a dot,
You can love and think, and the earth cannot."

To Conductors of Summer Schools.

Kindly send us data regarding your summer school—time, place, and length of term, &c., for publication in THE SCHOOL JOURNAL. Address Editorial Department, 6r East Ninth street, New York.

The School Journal,

NEW YORK AND CHICAGO.

WEEK ENDING MARCH 18, 1899.

Mr Kipling as an Educator.

The seriousness of real literature is shown by the intense interest with which the English-speaking world has watched by the sick bed of Rudyard Kipling. When a man has said something large and sincere the whole earth loves him for it. Among the English writers of this end of the century, no one has more genuinely given voice to the aspirations of the race. With a heart warm with human sympathy, he has exalted the man above all things else. He has succeeded in re-vitalizing literature; he has taught the age to respect itself. In his art he has touched life on nearly every side. Some day his thoughts on the education of children will be thrown into relief, and it will be found that the frank and wholesome spirit revealed in his writings has shed new light also on this important problem. His "Baa, baa, black sheep" is a piece of educational child study worth more than most of the more strictly pedagogical productions in this field. And this is but one of many of Mr. Kipling's efforts to convert the world to a right interpretation of the doings and feelings of children.

Profitable Programs.

The following resolutions adopted by the Department of Superintendence at Columbus show the progress that has been made in the direction of professionalizing the work of school supervision. After the usual vote of thanks to all who helped to make the meeting a success, it was *resolved*:

1. That adequate representation of the schools of the United States at the Paris exposition of 1900 is of great importance and that the efforts being made to secure such representation deserve our cordial co-operation.
2. That we are greatly gratified by the growing recognition and appreciation of the teaching profession and especially by the growing tendency of school courses and the public to regard the competent superintendent as an educational expert.
3. That the tendency widely shown to reconstruct the organic law governing the election and powers of boards of education so as to diminish to the lowest possible point the opportunity of their members to use their office for their personal interests is an indication how abhorrent to the feelings of the better portions of every community is any attempt to use the public schools for any purpose less worthy than training the rising generation to honorable citizenship and efficient industrial life.
4. That the increasing co-operation of the home, the schools, and the library, the greater extension of educational advantages, the increasing attention to the artistic decoration of the school-rooms and to the hygienic conditions, the growing interest in educational reform exhibited by the magazines and the daily press, are all evidences of educational progress on which we may sincerely congratulate ourselves.
5. That the growth of the attendance at the meetings of this department and the interest of others than the superintendents in our meetings show how attractive a center of educational life we have become.
6. That we recommend the appointment of an advisory committee on program to assist the superintendent—the committee to consist of three members, to serve three years each. That

the retiring president appoint three members on that committee, one to serve one year, one two years, and one three years. That at each annual meeting one member of the committee be elected.

The appointment of an advisory committee on program is particularly commendable. The work of this committee will be one of greatest importance. Mr. Mark suggested that if he could have had the advice of such a committee during the past year, he would have been saved much anxiety and a vast amount of labor. Now that this step has been taken a still greater advance may be looked for.

THE SCHOOL JOURNAL agrees with Mr. Mark that a plan similar to the one adopted by the American Association for the Advancement of Science ought to be adopted by the Department of Superintendence as well as the N. E. A. The committee announces thru the educational press a number of subjects whose discussion is considered timely and desirable. Everyone who chooses is allowed to submit a paper. After careful examination the council on program determines what papers may be presented to the convention. If papers are not worth consideration they are returned to the writer. If they can be made acceptable, the committee suggests needed changes, and papers found wholly acceptable are allowed to be presented as they are. The committee thus assumes editorial offices.

While this is probably the most satisfactory plan that can be suggested to the N. E. A., it may be possible for the Department of Superintendence and other special sections to go one step further yet, and order all accepted papers printed and distributed in advance, and then devote the whole meeting to intelligent discussion of those papers. The responsibility for the success of the meeting could then be fixed upon the chairman, whose duty it would be to keep the discussions strictly confined to the points under consideration, declaring out of order any talk not showing previous careful reading and close adherence to professional argumentation. This plan would do away with all cheap speech-making and would result in making the reports of the department meetings actual contributions to pedagogic theory and practice.

Responsibility of Superintendents.

It is an unfortunate state of things when an honest, wide-awake, and thoroly competent superintendent or principal is disabled by petty annoyances from doing his best work. It means a positive waste of ability and energy, and yet this condition obtains in many places.

Take St. Louis, for example. Dr. Soldan is justly considered one of the strongest school superintendents in the whole country. He is a man of sound pedagogic judgment and wide successful experience; he is practical, sympathetic, resourceful, and has no superior in the educational field as regards executive skill; he was prominently mentioned for the superintendency of New York city, and the National Educational Association, and particularly the Department of Superintendence, have at various times honored his evident leadership in educational affairs. Yet the St. Louis board of education and its hangers-on have harassed him from the very beginning of his service.

In spite of this heavy and ever-present burden, Dr. Soldan's administration has been uniformly excellent.

The St. Louis schools are better now than they have ever been before. Evidences of progress are visible in every single school. The defects pointed out by Dr. Rice some seven or eight years ago in his *Forum*, articles, and in his book on the American school system, have disappeared. The schools not only compare favorably with those of other large cities, but there are many things which might profitably be adopted in other systems of education. And this is due principally to Dr. Soldan and the principals and teachers who join hands with him to put St. Louis in the front rank educationally, in spite of the reactionary tactics of some small caliber men in the board of education who, with their patrons and proteges, are following a policy not purposed to serve the highest interests of the schools.

The superintendent ought to be considered a responsible man in a responsible position. If he is to be held accountable for the school system, he must have freedom to work out his ideals. It is a wise business policy after engaging a good man to get out of him the best there is in him by giving him free scope, which simply means getting the most for the money.

Help Wanted.

A committee to report on the "Relation of the Public Library to the Public School" was appointed at the Washington meeting of the N. E. A. A sub-committee has been appointed to make a list of books for pupils in grades one to twelve with special reference to the average country school teacher and the average grade teacher. This committee wishes all the help possible and asks all teachers to report to Sherman Williams, Glens Falls, N. Y., a list of the books they have found to be especially good, giving title, author, and if possible publisher and price. The committee would also like to have given the grade, or year in school, in which the book has been found most helpful, also whether the book should be read by the class in school, or at home, or by the teacher to the class. If teachers generally will report regarding these matters they will enable the committee to make a more valuable and helpful report than they will otherwise be able to do. It is hoped that these reports will be very general and be made promptly.

Summer Session.

Nearly all of the big universities now have summer courses, which in many cases may be counted towards a degree. At Harvard, where vacation instruction has been given for upwards of twelve years, the number of students has grown steadily so that the summer school is now one of the large departments of the university. The work at Chicago goes on thru the summer and does not differ in quantity or quality from that offered in the fall and winter terms. Cornell, Michigan, Virginia, the Catholic university at Washington—all make inducements to teachers to become students. All realize that in no other way can the influence of the university be more effectively spread. Lately Columbia has decided to establish summer departments, and it is reported that Princeton will also join the movement.

Why do the normal schools hold back? Every single one of them ought to have summer sessions, instead of leaving the field open to the universities.

It is to be hoped that the Citizens' Educational Committee of Detroit will succeed in securing the adoption of its plan for the reorganization of the city school system. This plan is without doubt the best that has been elaborated thus far. Responsibility is placed where it belongs. Every provision of the bill shows careful thought and close consideration of the experiences of cities which have adopted administrative measures within the last five years. THE SCHOOL JOURNAL will speak of the bill and committee more in detail in the next School Board Number. The friends of educational reform, especially those in Michigan, are urged to use the full power of their influence to help the Citizens' Educational Committee of Detroit by appeals to members of the legislature. Mr. Earl D. Babst, who is the secretary of the committee, will no doubt gladly supply all needed information as to how to make the most of the co-operation.

Both Pres. Harper, of the Chicago university, and Pres. Rogers, of the Northwestern, have been unsuccessful in getting bills thru the Illinois legislature. Pres. Harper was ambitious to reconstruct the public school system upon the principle of autocratic rule which prevails in his own university. Pres. Rogers proposed a system of general discrimination against small colleges and professional schools not attached to some university. Both failed to get what they wanted.

In place of the Harper bill, Louis O. Kohtz, of the Chicago educational commission, is engaged in the preparation of a new law. Pres. Harper's plan will be followed to the extent of empowering the superintendent to appoint all teachers. The objectionable features of the defeated measure are to be expunged.

The American School Furniture Company was incorporated at Trenton, N. J., on March 13, with a capital stock of \$10,000,000. This seems an enormous amount of capital for so small a number of manufacturing firms as have united in this combination.

State Supt. Skinner, in a letter to the *Tribune*, reaffirms the position, often taken in his reports, that there is not enough co-operation between the home and the school. Parents too often feel that their whole duty is done when they have paid their taxes and sent their children to school. They ought, on the contrary, to know the teachers personally and to follow carefully the work of their children. Child study is impotent without the help of the parents.

Professor Heyman Steinthal, of Berlin university, who died March 14, was one of the most distinguished philologists of the century. He has written a large number of linguistic and philosophical books, many of which have been widely read, and he has contributed very many valuable books to philology.

The death of Emile Erckmann, the French novelist, is also announced. The large number of his works on fiction were written in conjunction with the late Alexandre Chatrian under the combined name of Erckmann-Chatrian. "L'Ami Fritz" is probably the best known work of the dual authorship. It is one of the few latter day books of wholesome fiction in the French language that can be safely placed in the hands of young people.

The Educational Outlook.

High Schools for Everybody.

BOSTON, MASS.—An "open door" to the high school was part of the demand made by Dr. Hanford Henderson in his lecture on March 6, at the sloyd training school hall. His ideal high school is different from that of Mayor Quincy. He would have no entrance requirements; none should be barred out. Large secondary institutions are, in his opinion, impossible. The ideal high school should contain only about 120 pupils, all living close by the school.

Moral Education of Children.

ORANGE, N. J.—Prof. Edward Howard Griggs gave the first of a series of five lectures under the auspices of the Educational Union, February 27.

Professor Griggs said that moral training should be more than merely negative. Children do not like to have stories told to illustrate a moral. The rules of law and order are the laws of human institutions, and these laws apply to the child. The question of order in the school-room is not merely for the teacher's convenience, but to make the child's environment such that he will respect law and order.

All character, said Prof. Griggs, is founded on sincerity, and the child is more sensitive to insincerity than the adult, as the latter's life is largely made up of compromises with expediency. Nothing of these is known to the child, and perfect sincerity and justice is necessary to lay a proper foundation of character and to retain the child's respect for parents and teachers.

Among the Cornellians.

ITHACA, N. Y.—Governor Roosevelt has a double at Cornell in the person of Prof. Willard W. Rowlee, of the botanical department. The resemblance is said to be very close.

The university library has just come into possession of the very last book written to prove the medieval theory of a flat earth. It is from the hand of a Spanish bishop in 1496, in the full knowledge of the discoveries of Columbus, which it ridicules, claiming that they have no bearing upon the shape of the earth. The worthy bishop urges that the twelve apostles were sent to the uttermost corners of the earth and, as none of them went to the antipodes, *ergo* there are no antipodes.

Successors to Col. Waring.

CHICAGO, ILL.—Chicago people had a chance on March 2 to learn how New York streets are kept clean. Miss Grace Gallagher, the head of the street cleaning classes in New York city, told in a very interesting lecture of some recent experiments in practical civics. In the most crowded districts of New York the school children are being taught, at least theoretically, that dirt is immoral; that it is the duty of good citizens not to throw filth into the streets, not to obstruct fire-escapes, not to bespatter street cars with tobacco juice. A sort of street-cleaning league has been organized among East-side boys and girls. It will doubtless prove to be a very valuable auxiliary to the *white wings*.

Gen. Eaton Reports.

Some weeks ago, President McKinley sent Gen. John Eaton to Porto Rico to study the situation there from an educational point of view. As General Eaton was for many years United States commissioner of education, any statement made by him in this matter is important. In his report, he calls attention to the essentially Spanish character of the people. For four hundred years the language, the laws, and the power of popular tradition have all been Spanish. This government, General Eaton urges, must make it clear to all that popular education, and that in the English language, is the American policy.

The people, General Eaton says, are neither dull nor stupid. The children are especially bright. Yet, while there is on the part of many an almost pathetic eagerness to learn the American language and American ways, the more educated men on the island seem indifferent to the education of the people. They do not understand why people in the United States should take such an interest in the matter.

It has been agreed that all teachers now employed will be expected to learn English. New teachers will be preferred who understand English, and examinations in the normal schools will include English. Expert American teachers will also be employed to visit all the schools once or twice each week to see that this language teaching is faithfully done. District or township libraries of American books are to be established, and public lecturers employed with the use of the stereopticon to popularize information respecting persons and events in American history.

Committee of Chemistry Teachers.

BOSTON, MASS.—The committee on a high school course in chemistry has made a report which aims to settle the following points:

1. The place of chemistry in the high school curriculum.
2. The allowance of time to the subject.
3. The subdivision of the instruction into historical, informational, and theoretical.
4. The best methods of laboratory supervision.

The general demand is for more definiteness and precision. The present Harvard requirements are scored on the ground of haziness. All the laboratory work should tend toward extreme accuracy. The scientific imagination should be cultivated by the discussion of general theories. The allotment of time should be sufficient to insure thoroughness. The study should be put well along in the high school course, and invariably after some severe preliminary study of physics.

The next meeting of the society will take place on April 29, in Boston.

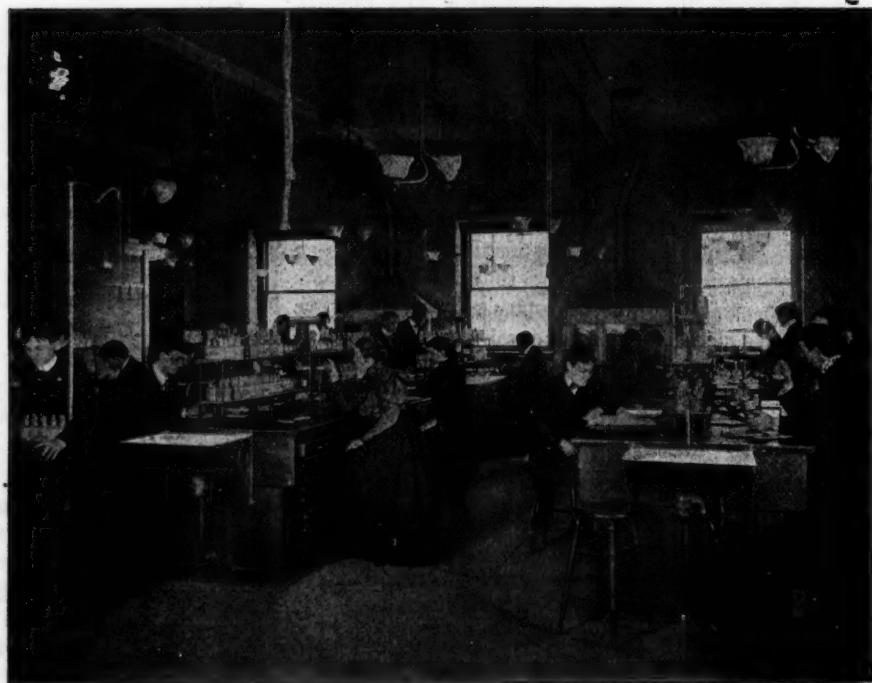
Talks by Business Men.

ELK RAPIDS, MICH.—In accordance with a plan devised by Supt. H. C. Lott, several prominent business and professional men have given talks to the pupils of our high-school. A few minutes every Monday morning have been devoted to this purpose, the subjects treated being of a practical nature. Among those considered during the past few months may be mentioned: "Essential Qualifications for Business," "The Physician, His Preparation and Work," "Comparison of School Methods and Work—Past and Present," "Preparing for College, Why and How," "Methods in Banking."

These talks have proved helpful to the school and students in many ways, as they turn the thoughts of the pupils out upon the world's activities, and the attention of those outside in upon the work of the school.

Teaching Geography.

CINCINNATI, O.—On Feb. 14, Prof. W. G. Tight, of Denison university, spoke at the natural history rooms on "Geographical Teaching and the Geography of Ohio." He took the ground that teachers should do field work with their classes, but before this could be done, the teacher must have appropriate training. There are two ways of obtaining this, at normal schools and by self-training. No teacher should take a class and make a haphazard trip into the woods and fields expecting to get good results. He should first go alone and determine what he will present to his class and then follow out the arranged plan. So few teachers have the advantage of normal school



Chemical Laboratory.

training, that many must be self-trained. They must in a sense become original investigators. The speaker condemned in no uncertain terms the texts used in our schools. To illustrate the ludicrous things put in our geographies he cited a question in one of our late texts: "How many slopes do the rivers of the Ohio show?" And we are still wondering what the question means. There has never been an authorized topographical survey of Ohio, consequently we have no correct map of the state. The present map of Ohio rests upon land surveys, some made a hundred years or more ago—a township here and there made into a map. The geological survey is the only systematic one ever made of the state. We are behind in Ohio in our geography teaching because we have no true map.

The old method of teaching geography developed the memory only, and the reasoning power was entirely neglected. The new books have vivid descriptions and much more physical geography. They are much better than the old books, yet there is great danger of going to the other extreme of geography making. Prof. Tight spoke in high terms of the geography syllabus prepared by a committee of Ohio school men. Children's conception of location on the earth in the main is wrong. We think of place on the map, not in geography. We think but short distances from our hearthstones, when we should think the earth entire. He gave so many different definitions of geography that the hearers were at a loss to know what to call it. In our work in this branch we should develop powers of observation, form right concepts, study causation, and have product work, map drawing, etc., and yet Prof. Tight condemned in strongest terms the kind of map drawing we are doing, namely, giving the child a map and having it copied. M. F. A.

The Gifford Lectureship.

CAMBRIDGE, MASS.—Prof. Josiah Royce, of Harvard, has gone to England to fill his engagement to deliver the Gifford lectures on "The Philosophy of Religion," at the University of Aberdeen. These lectures are ten in number. Each lecturer invited to give them is engaged for two years. Prof. Royce is the first American to receive the honor of an invitation to deliver them. It is certain that no more brilliant and eloquent representative of American philosophy could have been sent over.

Setback for Manual Training.

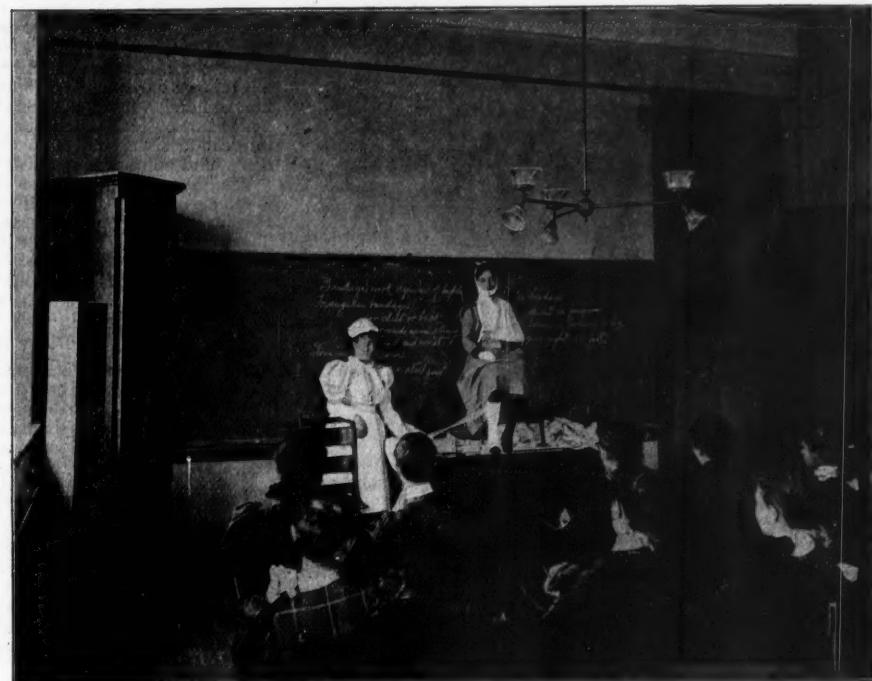
MILWAUKEE, WIS.—Two matters of importance occurred at the last monthly meeting of the public school principals. One was the defeat by a large majority of a proposition to introduce manual training into the graded schools. The other was an animated discussion in which the high school principals lined themselves up sharply against the grammar masters. Complaint was made that every year more and more pupils come up from the grammar grades unfit for high school work. The retort was that every year the high schools get more and more out of the educational current and that therefore their instruction does not dovetail with that of the more progressive elementary schools. Supt. Siefert, who brought the discussion to a close, appeared to side with the grammar masters.

Successful Against Odds.

PHILADELPHIA, PA.—She special school for truants and dull children is running successfully in spite of most adverse conditions. It has been ousted from its cosy rooms in the guild house of St. James' parish and is now located in dirty, unattractive quarters in Garfield street. The number of teachers is too small to get the very best results, and the grading of the children is very difficult to make. Yet the impression is spreading that the school is doing good work and it is not unlikely that a larger appropriation and a more general interest will next year result in establishing the school on a firm basis.

International Kindergarten Association.

CINCINNATI, O.—One of the rarest treats Cincinnati people have had for a long time was given them March 1-4 inclusive by the International Kindergarten Association. Prof. P. U. N. Myers, of Cincinnati university, gave the address of welcome at the Scottish Rite cathedral on Thursday evening. He began by saying, "Christianity and Froebelism are one, and



Hygiene and Home Nursery, Indianapolis Manual Training School.

they have rendered the world a service by putting this idea before the people. They are one in the end and aim of teaching, all honor to the teacher who makes clear the end of teaching." "We are in danger of making education sterile in our memoriter systems." "They are still one in teaching unity of soul life." "Education of the head can not be separated from the education of the heart." "This spirit and method can not fail to be the idea of all education."

Prof. Myers was followed in an able address by Caroline M. C. Hart, of Baltimore, on "The Origin of the Kindergarten." She said in substance that the study of literature and philosophy are the principal factors in the training of kindergartners. She traced the organization, speaking at length of Froebel and the conditions of the people in Germany at the beginning of this century. There is something deeper behind every great movement, than we think, God manifested and exemplified in man. People who are stirred by these great movements, count it a joy to be alive. There is but one law, and all things in the universe respond to it. Scientist, poet, artist and all, took up the thought that humanity is one. We should acquire knowledge for the sake of knowledge. Should do right for right's sake. The reformer always sees that what a people do in one age is not so different after all from what they do in other ages. History is one great continuous movement from a lower to a higher plane. Philosophy says man is a self-contained existence. Froebel saw as no other man saw into the heart of a child. The world never answers anything till the mind questions. Again, history is one long record of the misuse of power. Miss Hart spoke of the death of force as set forth in "The Rime of the Ancient Mariner." The only thing to be criticised in her address was its great length.

Many people were sorely disappointed because Supt. Dutton failed to appear, but Miss Harrison proved a worthy substitute. It was said by those who were fortunate enough to hear her. I was one of the unfortunate who sat so far from the stage that her voice did not reach me.

M. F. A.

Announcements of Meetings.

March 31 and April 1, '99.—North Central Association of Colleges and Preparatory Schools, at Chicago. Secretary C. A. Waldo, Purdue University, LaFayette, Ind.

April, '99.—Commission of Colleges of New England at Boston. Secretary, William Carey Poland, Brown University, Providence, R. I.

April 18.—National Academy of Sciences, at Washington. Sec'y, Ira Remsen, Johns Hopkins University, Baltimore, Md.

June 26-28, '99.—New York State University Convocation at Albany. Secretary, Melvil Dewey, Albany.

July 5-7, '99.—New York State Teachers' Association, at Utica. Secretary, Benjamin Veit, 173 East 95th Street, New York City.

July 9-11.—National Council of Education, at Los Angeles, Cal. Sec'y, Bettie A. Dutton, Cleveland, O.

July 11-15.—National Educational Association, Los Angeles, Cal. Pres., Dr. E. Oram Lyte, Millersville, Pa.; Sec'y, Irwin Shepard, Winona, Minn.

April.—North Central Association of Colleges and Preparatory Schools, at Chicago. Sec'y, C. A. Waldo, Purdue university, Lafayette, Ind.



Supt. W. W. Walters, Jefferson City, Mo., Chairman of Executive Com., Mo. State Teachers' Assoc'n, 1898.

Aug. 19, '99.—American Association for the Advancement of Science, at Columbus, O. Secretary, L. O. Howard, Cosmopolitan Club, Washington, D. C.

Aug. 19.—Geological Society of America, at New York. Secretary, H. L. Fairchild, University of Rochester, Rochester, N. Y.

The Outlook in Chicago.

Experiments have been begun at the Alcott school, in which by means of the "ergograph," it is hoped to determine the ability of pupils to endure fatigue, and their susceptibility to it under varying conditions. The experiments are being conducted under an order issued by the board of education at the instigation of Dr. W. S. Christopher, and are being carried on by Prin. C. Victor Campbell, of the Brighton night school, and Prof. Fred. Smedley, University of Chicago.

The ergograph consists of a drum actuated by clock work, upon which is placed a record slip of paper; on this slip records are made by two pointers, one marking seconds, and the other recording the movements of the subject. The child under examination has his left hand fastened to a board, and to the middle finger of the hand a wire is attached, connected with the second pointer mentioned above, and also connected with a weight by a thread running over a pulley. The child draws in his finger, raising the weight, and causing a record line to be made across the paper. If he is in a normally healthy condition, and not over fatigued, the record will consist of a series of marks making a set of regular saw teeth across the drum. They will be intersected at regular intervals by the seconds' marks. If, however, the child is fatigued, the points of maximum vibration of the pointer soon become irregular; and if the child is nervously worn-out the whole path of the pointer will be jerky.

By means of these records it is hoped the period of the day when children are best able to stand fatigue may be determined also, at what periods of life they are most subject to fatigue, and what exercise and study various children are best able to take without overworking or becoming nervous. It has been noticed already, that the children who were pointed out by teachers as nervous, hard to control, and unable to work steadily, were unable to control their fingers and produced ergograms with wavy and irregular lines. And on the contrary, children who were steady and strong produced clean-cut, decisive records.

Complete physical measurements of the children such as are taken in college are being made at the same time, and the condition of the children is being studied with a view to corrections on the present physical exercises as well as in the rearrangement of the daily program. Similar work has been done in St. Louis heretofore, but not to the extent now being carried on here.

The Educational Bill.

The Harper educational bill is still occupying the attention of educators and school politicians. The teachers' societies have each devised a set of amendments to it. The "federation" sent a delegation to Springfield recently to lobby in favor of the changes it proposed. Advocates of the bill in its original form are lying low, and saying little. But the general impres-

sion that the bill is dead seems to be scarcely borne out by the facts.

The chief objections to the measure are that it gives too long a term and too much power to the superintendent. This feature is being fought at every turn by the politicians on the board and by certain teachers who have always found it to their interest to stand well with that faction of the board which deals with politics as well as school affairs.

Whether any bill will pass at this session of the legislature it is too early to say. But it seems probable that a modified Harper bill will be put thru, and will give universal satisfaction. The changes will probably be to fix the term of the superintendent and of the business manager of the schools at three years each; to leave the board membership at its present size, twenty-one; and to omit the citizens' visiting committee provided for by the bill.

Delay in Salaries.

Chicago teachers were made sufferers by the shortage of money in the school board treasury this month, when their February salaries were delayed a week or more. W. J. Onahan, of the Home Savings' bank, the school fund repository, came to the rescue with an advance and the salaries were paid in full. The pay roll for the month amounted to \$575,000.

New School Buildings.

At the last meeting of the school board provision was made for a large number of new school buildings to be begun at once, chief of which is the new North Division high school, a much needed improvement.

JOHN L. MATHEWS.

In and Around New York.

For the benefit of the Normal College Alumnae House, located at 446 East 72nd street, a bazaar will be held at the Waldorf-Astoria, April 7-8. This institution has been in existence about four years. By means of its several resident workers, a far-reaching influence for good has been created in the immediate neighborhood of the house. Its kindergarten, free circulating library, classes in embroidery, physical culture, literature, sewing, singing, cooking, dressmaking, typewriting, stenography, clubs for boys and girls, concerts, penny provident fund and other features of immediate practical utility are helping to transform the help needing boys and girls into self-respecting, helpful, clean-minded American men and women. To carry on these activities, funds are needed, hence the proposed bazaar is undertaken to raise such funds. Season tickets are \$1.00; single admission, 50 cents. All offers of assistance and contributions may be sent to Mrs. Ernest Bunzl, 155 West 75th street, chairman ways and means committee.

PATERSON, N. J.—At the annual meeting of the Paterson teachers' association, held on March 2, Pres. A. F. Chadwick discussed the salary question. The teachers of the association have already been agitating the matter with great energy and there is said to be every reason to hope that their efforts will be successful. They want an increase in the salary lists of the city of about \$30,000.

BLOOMFIELD, N. J.—An interesting program was arranged in connection with the dedication of the Brookside school last Wednesday evening. Among the speakers who took part were Supt. Vernon L. Davey, of East Orange, Supt. Randall Spaulding, of Montclair, and Supt. Elmer C. Sherman, of Essex county. A pleasant feature of the occasion were the two-minute remarks by Supts. Marcellus Oakey, of Belleville, and William R. Wright, of Nutley, and Prin. Edward H. Dutcher, of East Orange.

Closing Exercises of Evening School No. 23.

The closing exercises of evening school No. 23, corner Mulberry and Bayard streets, Mary A. Magovern, principal, took place on the evenings of February 28 and March 1. A large number of visitors were present on each occasion. Ex-Commissioner McSweeney and Associate Supt. Meleney addressed the pupils on the first evening, paying high tribute to the efficiency of principal and teachers. Mr. Joseph Rustland, the genial representative of Ginn & Co., presided on the second evening and after a very felicitous address distributed the medals and diplomas. An attractive program was presented, the distinguishing feature of which was a dramatic representation of "The Courtship of Miles Standish," rendered by a number of the pupils under the tutorship of Miss Mary A. Curran.

Spelling and Pronunciation.

The fourth of a series of conferences on the teaching of English was held at the Ethical Culture School on March 13. Mr. J. F. Reigart, principal, presided. The question of spelling and pronunciation brought out an animated discussion in which almost all the teachers took part. It appeared that the pronunciation of certain words by some teachers was a subject of comment and ridicule among pupils, and an attempt was made to determine the course that should be taken by the school in the case of such words. While no general agreement was reached, it seemed to be the sentiment of the majority that in cases where two or more pronunciations are allowed by the

good dictionaries, that one should have preference which goes least against the grain of the community. Thus *vase* should be pronounced *vaze* rather than *väz* or *vaws*. In spelling the same rule should apply. Whatever is *outré* or affected—in an American—had better be barred out of the schools.

Queens Borough Teachers' Association.

The Queens Borough Teachers' Association held its third quarterly meeting on March 4, in the Flushing high school. Pres. J. D. Dillingham introduced as the lecturer of the afternoon, Dr. Frank A. Hill, secretary of the Massachusetts state board of education. Dr. Hill's address was so instructive and practical that he held the attention of his audience throughout and at the close of his remarks he was unanimously voted the thanks of the association. Prin. John Holly Clark, and Prin. Matthew D. Quinn reported in behalf of a committee, consisting of Prins. Clark, Quinn, and Quigley, Miss Anna McAuliffe, Miss Mary L. Lyles, Miss Tefft, and Miss Bell, sent by the association to Albany to represent it at the recent legislative hearing on the Ford bill. Borough Superintendent Edward L. Stevens, who represented the Queens borough board of education at Albany also addressed the association. It was voted to hold the next meeting in the Jamaica high school on May 6.

Miss Leah M. Decker's Case.

This teacher in the school at Good Ground, Suffolk county, Long Island, was charged by one of the trustees, Mr. S. L. Squires, with unbecoming conduct in that she had caused his son, her pupil, Joseph Squires, to become infatuated with her; a trial took place at Riverhead, before School Commissioner Charles Howell, who has the power to take away her certificate and thus remove her as a teacher. Miss Decker was two hours on the stand. It appears that she is twenty-four years old and the boy sixteen; that he wanted to marry her and they went to a clergyman for that purpose. Becoming jealous, the boy threatened to kill himself, and took some laudanum and thus his infatuation became public.

Items of Real Interest.

CINCINNATI, OHIO.—A sixteen-year-old school boy, Richard Brown by name, shot himself dead at his home February 27. The boy was considered a very bright pupil, but in a recent examination he did not receive as high an average as he expected. His classmates twitted him with it and he became despondent. He wanted to leave the school and go to work, but his father objected, as he wished the boy to complete the course.

CHICAGO, ILL.—Supt. Andrews has announced definitely that Spanish is to be taught in the public schools. The plan is to have in each district three elementary schools in which there will be instruction in Latin and Spanish.

FITCHBURG, MASS.—Under the supervision of E. A. Kirkpatrick, instructor in psychology at the Fitchburg normal school, examinations of the eyes of public school children are going on. The usual revelations concerning the condition of dull children have followed.

ROCKFORD, ILL.—For the aid of the teachers who will attend the Winnebago county institute, March 27-31, Supt. O. J. Kern has made arrangements so that the instructors can take books from the public library. This will enable them to make the courses of instruction more valuable to the teachers than any offered heretofore.

YPSILANTI, MICH.—Prof. B. L. D'Ooge professor of Latin and Greek at the state normal college has been granted leave of absence to take effect at the close of the present term. Duane Reid Stuart has been chosen by the state board to take charge of his work during his absence. Mr. Stuart is at present studying at the American school at Athens, Greece, on a scholarship which he obtained at the University of Michigan.

ALBANY, N. Y.—The state normal college has recently arranged a course of study for supervisors of schools. Its purpose is to give superintendents, supervisors, school commissioners, directors of teachers' training classes, and others an opportunity to secure a broad pedagogical and philosophical basis for their duties with as much practical training as can be given in the time spent at the college.

Work will begin September 13, 1899. To gain admission to the course, the candidate must possess a college graduate's certificate issued by the superintendent of public instruction, a state certificate issued since 1875, a New York state normal school diploma, or a school commissioner's first grade certificate obtained under the uniform system of examinations.

ITHACA, N. Y.—Dr. E. B. McGilvary, has recently been made professor of ethics in Cornell university. Dr. McGilvary, was at one time instructor in Biblical exegesis at Princeton, and was later a missionary to Siam. He is the author of a translation into the Lao tongue of a large part of the New Testament.

ST. PAUL, MINN.—The Staples bill provides for a uniform system of examinations for first and second grade certificates. No material change will be made in the requirements, but all papers will be marked in the office of the state superintendent instead of by the county superintendents.

Notes of New Books.

Physical Geography, by William Morris Davis, Professor of Physical Geography in Harvard university. Professor David has succeeded in divesting physical geography of the usual dry details, and in presenting the subject in a form which makes interesting reading. The treatment differs from that usually pursued, in showing much more clearly the forces whose action in the past has produced the conditions of the present. It thus forms an excellent introduction to the study of geology. Views made from photographs give a good idea of many of the remarkable spots of our own country, while ideal sections show the direction in which changes are now progressing. Solutions of the most significant mathematical problems relating to the earth are added as an appendix. (Ginn & Co., Boston and London).

Hallock's Suggestions for Lessons on the Human Body is a book of more than ordinary interest to the teacher. Altho physiology has become a part of the public school curriculum in almost every state, nothing in the way of a book giving suggestions to teachers for making the work interesting and profitable has before been published. In the lower grades especially, physiology and hygiene usually occupies an isolated place, being completely cut off from those subjects with which they are naturally related and in which the pupils are interested. This results in work which is tedious—neither interesting nor profitable. Mrs. Hallock, who is a lecturer on physiology and hygiene before the Massachusetts teachers' institutes, has produced a book that will prove of great value to all who teach the subject in the grades below the high school. It aims to correlate the teaching of physiology with topics in nature study and to suggest a practical common-sense treatment of the subject that shall make it of the greatest value to the child. (E. L. Kellogg & Co., New York and Chicago. Price, 75 cents.)

Three Studies in Education by Dr. Edward R. Shaw, Dean of the School of Pedagogy of the University of the City of New York, is the title of a little book just published by E. L. Kellogg & Co., New York and Chicago. The studies are: The Spelling Question, Composition for Elementary Schools, and Value of the Motor Activities in Education. Dr. Shaw's treatment of these important subjects will prove of much interest to all teachers. Price, 25 cents.

The general character of the books of the "Home Reading" series is certainly pretty well known by this time. They take up various topics that come within the child's experience and treat them in such a way that young children can obtain pleasure and profit out of the reading. In *Playtime and Seadtime* Col. Francis W. Parker and Nellie Lathrop Helm have worked nature teaching and the study of life into a delightful story in which several very live children are introduced. The book is charmingly illustrated. (D. Appleton & Company, New York.)

Teachers and pupils will both be delighted with the first reader called *Nature Study in Elementary Schools*, prepared by Lucy Langdon Williams Wilson, of the Philadelphia normal school. This little book is beautifully illustrated, as a nature study book should be, and the contents is specially adapted for school-room needs and arranged according to months. The purpose of the author in preparing this book was to put into the hands of little children literature which shall have for their minds the same interest and value that really good books and magazines have for grown-up people. The desire is to plant seeds early in the mind that may later develop into a love for art, for literature, and for nature. In order to obtain the best results, each of the lessons in the book should be preceded by a nature lesson, for which this author's manual on "Nature Study" will give the necessary directions. (The Macmillan Company, New York. 35 cents.)

Two professors in Yale, Charles S. Hastings and Frederick E. Beach, have prepared *A Text-Book of General Physics* for the use of colleges and scientific schools that takes into account the needs of those institutions as they have been developed by actual teaching. For instance, they have found that an understanding of energy is absolutely essential to a satisfactory intellectual grasp of physics. This can be obtained by sustained study of dynamics, whence elementary mechanics must be regarded as the logical basis of the whole science of physics. No pains should be spared by the student in attaining clear notions on this portion of his course. The writers have therefore made their treatment of mechanics more complete than is ordinarily the case, especially in the physical notions that attach to the simplest cases of the action of forces. For the purpose of giving familiarity with these ideas, many problems are appended.

to the various chapters. The class of students for whom this book is intended are supposed to have a knowledge of trigonometry, but not of calculus; this is in agreement with the courses of instruction in most American colleges. Thermodynamics and electricity are developed with somewhat more completeness than usual, so that the engineering student can find the essential notions of his advanced work logically connected with those acquired at an earlier time. Quite an elementary treatment is given in one chapter of the limiting power of optical instruments. The study of the book is intended to be supplemented by work in the laboratory. (Ginn & Company, Boston.)

To teachers who are compelled to carry their lunch with them to the school building, and to others who like a nice lunch at home, Mrs. S. T. Rorer's little book, *Leftovers*, will prove a boon. What can be done to render palatable meats, game, eggs, vegetables, sauces, and fruits remaining from a previous meal, can easily be learned from this most practical book. (Arnold & Company, Philadelphia. Price, 50 cents.)

The red men of North America are among the most interesting races of savages in the world. They should be specially studied by Americans, not only on account of the prominent part they have played in our history, but because the race is fast passing away and the facilities for study are disappearing. Frederick Starr has made a special investigation of the subject. He has personally known some thirty different tribes. But no man who writes a book like his on *American Indians* can gather all the information at first hand; the subject is so wide that he must depend to a large extent on others. Therefore he has drawn largely on many sources, and he has condensed this information into a reading book for the boys and girls in school. He tells about the tribal government, clothes, food, ceremonies, houses, traditions, etc., in wonderfully condensed language. The text is illustrated with numerous pictures, many of which were prepared especially for this book. There are also two valuable colored maps—one showing the location of the Indians when North America was discovered, the other giving the Indian reservations in the United States to-day. (D. C. Heath & Company, Boston. 45 cents.)

The want of success in teaching composition, so often experienced, may be due to the placing of words before things. Prof. Alphonso G. Newcomer, of Leland Stanford, Jr., university, in his *Elements of Rhetoric*, has reversed this; he first centers the attention on ideas and leaves the consideration of diction to the very last. If words be thrust first upon the attention, the student naturally supposes that words, instead of the ideas behind them, are his raw material, and composition becomes to him a wholly artificial thing. The method adopted by Prof. Newcomer is one that will give freshness, independence, naturalness, and ease to the composition. The author emphasizes those things which he believes are at the basis of good composition—managing properly the few words that represent the germ ideas, the keeping of sentences from being submerged by the weight of their own clauses, the attending to the relation words, and the logical arrangement and proportionate emphasis of ideas. The old ground so often gone over by rhetoricians has been, for the most part, avoided as profitless. In order to aid the teacher, exercises in considerable variety are appended, together with numerous models. (Henry Holt & Company, New York. \$1.00.)

There are some men about whom we cannot hear too much and whose words cannot be too thoroughly studied. Lincoln was

one of these. We are just beginning to realize his greatness, and to study as they deserve to be studied the great thoughts he uttered. As an aid to this the volume of *The Words of Abraham Lincoln*, selected, arranged, and annotated by Isaac Thomas, A. M., principal of the high school at Burlington, Vt., will prove very acceptable. The object in preparing this book has been threefold:

(1) To put in form convenient for school use a collection of Lincoln's words which will serve as models of good English; and to make known his words as they ought to be known by all good Americans. (2) To gather together into such form as to make them easily accessible to the young, those speeches, state papers and letters of Mr. Lincoln which most clearly reveal what sort of patriot, statesman, and man he was, and which are representative of their author in the highest and best sense. (3) To present a connected piece of history covering the question of slavery as only Mr. Lincoln has covered it, and giving an exposition of the war for the Union made by a master hand. (Western Publishing House, Chicago.)

A long-felt want has been supplied by Prof. A. A. Fischer, of the Episcopal academy, of Philadelphia, in the form of his *Tables of German Grammar*. The main outlines of German grammar are here laid down in a pamphlet containing about one hundred pages. Proper attention is paid to etymology and the author shows how careful attention to that subject will aid the student in acquiring a vocabulary. The strong or irregular verb forms are the basis around which he groups a very large number of related words. Historical grammar is introduced wherever it can aid in explaining forms and the author shows his good judgment by holding to this criterion on the matter. The book will prove very helpful to all intermediate and even higher students of German. (I. G. Kohler & Sons. E. Steiger & Co. Price, 50 cents.)

Poor Human Nature is the appropriate title of a story by Geraldine Godfrey. It is appropriate, for the reader finds little trouble in feeling the pity that the author of the story must have felt for the mistakes and weaknesses of the principal characters. A poor German schoolmaster, the possessor of a divine voice, is discovered by an opera manager in a country village, where he is burying his talent, and apparently making no effort to reveal it to the world. The manager makes him an offer to go to a musical center and become a star tenor; his ambition is aroused and his friend, the clergyman, urges him strongly to accept. But his fiance, has a narrow prejudice against professional singers and the stage. In spite of her opposition, however, he accepts and becomes a great success, partly thru the encouragement of the chief soprano, whose tastes and his, both musical and literary, seem exactly to coincide, and for whom he soon entertains a strong regard. Still he holds the German idea of the sacredness of an engagement, and he marches to his fate with his eyes wide open—the expected happens. His wife has no sympathy with his tastes, and he soon ceases to speak of stage matters to her; she consorts with his enemies who pour into her ears insinuations; she does not even make a good housewife, and he more and more learns to find society outside of his home, and worse still, his regard for the soprano has grown into love. Her conduct is correct, for she breaks her engagement and flies to St. Petersburg to escape the gossiping tongues of the opera singers and their friends. Long years after when he has lost his voice and is poor and free, they meet and marry. The story carries a moral for those who will see it. (Henry Holt & Company.)

Scientific Memoirs—New Volumes.

Two more volumes of *Harper's Scientific Memoirs* are now ready, viz., *Röntgen Rays* (8vo, cloth, 60 cents), and *The Modern Theory of Solution* (8vo, cloth, \$1.00). The series will embrace a large number of translations and reprints of the most important articles which have been written in the history of science. Orders for the entire series, including vol. I. (*The Free Expansion of Gases*, 8vo, cloth, 75 cents) and vol. II. (*Prismatic and Diffraction Spectra*, 8vo, cloth, 60 cents) will be received. Send for circular.

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The increasing demand for original historical documents illustrating the growth and development of American institutions, has led to the publication of the *Liberty Bell Leaflets*. That the student may see history thru the eyes of its makers, this series will present, from time to time, important original papers which are by reason of expense or rarity not easily accessible. They are edited by Martin G. Brumbaugh, A. M., Ph. D., and Joseph S. Walton, Ph. D. We have just received the following numbers: No. 1, "Inducements and Charter from States General of Holland to Settlers on the Hudson;" No. 2, "The West Jersey Constitution of 1677;" No. 3, "Penn's Frame of Government of 1682 and privileges and Concessions of 1701," and No. 4, "Charter of the Province of Pennsylvania, granted by Charles the Second of England to William Penn, in January, 1682." (Christopher Sower Company, Philadelphia. 5 cents each.)

The title of *Greater America* suggests our new possessions, but does not tell that this attractive book is a collection of half tone reproductions of photographs taken in Cuba, Porto Rico, and the Philippines. The photographs are seven by four and one-half inches in size, and cover a wide range of war views, beginning with camp life of regulars and volunteers, and showing drills, the transports, troops embarking for Cuba, the voyage, the battles and scenes in Havana, and then taking up the Philippines for an interesting treatment. The illustrations are accompanied by explanatory or descriptive remarks, some of which explain a great deal in a few words. The cover is ornamented with silver and black, and the book as a whole is well worth a careful study (F. Tennyson Neely, New York.)

German Sight Reading, by Idelle B. Watson, is a little book intended to be used for written class-work, without the aid of dictionary or grammar. The selections represent the work of one year, and are graded accordingly, the first passages being the easier ones. As the requirements for college have been constantly kept in view, the selections have been made as varied as possible, and tho they contain an extensive vocabulary, the words are those in common use only. Where the chances are that the pupil, in a year's work, has not met them, the English equivalents have usually been given. (Henry Holt & Company, New York. 25 cents.)

It is said that one is never a proficient in a language until he has dreams in which he uses that tongue. This may be an ex-

treme view, but certainly one must think in a language before he is master of it. To lead the student to think in German is the object of the reader, *Sprache und Gespräche*, by Jacob P. Loesberg. It follows the natural method, teaching German by the use of the German language; it proceeds from the most simple matter to the most elegant German literature, both in prose and verse. (The Morse Company.)

Scenes de Voyages, a part of Victor Hugo's *Le Rhin* furnishes excellent material for a school text, as the subject is interesting in itself and the style of Victor Hugo is stimulating in the best sense of the word, and therefore suitable for the student. The notes deal largely with the historical and literary allusions, nothing more than translations being offered in explanation of the idioms. An index of proper names annotated and a short biographical account of the author are added. It is unfortunate that the editor indulges in such sweeping statements as: "It is probable that the future will look upon Hugo as the most original and the greatest figure in the world of letters in the nineteenth century." Has the editor forgotten that Goethe lived thirty-two years in the nineteenth century? The publishers are to be congratulated that they have issued this book in such an attractive form. Unfortunately text editions usually appear in such a poor garb that the student does not consider them fit to become a part of his library. (Henry Holt & Company, New York. Teachers' price, 85 cents.)

Volkmann-Leander's *Träumeuerien* has been edited with notes and vocabulary by Idelle Watson, of the Hartford high school. The book is best fitted for students who have mastered the rudiments of German grammar. (Henry Holt & Company, New York.)

Few subjects have engaged the German mind more within the last twenty-five years than the customs and traditions of the common people. Peter Rosegger, who draws on Southern Germany and Switzerland for his themes, has endeared himself to the German people on account of his sympathetic insight into the life of the mountaineers. It is apparent that extracts from his work, *Die Schriften des Waldschulmeisters*, as edited by Prof. Lawrence Fossler, promise to be popular in American schools, where *Schiller's Tell* has been read so persistently. The notes offer adequate explanations of the difficulties encountered in the text. (Henry Holt & Company, New York. Price, 40 cents.)



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When Cupid Calls is a book of smooth,—yes, unusually fine—society verse by Tom Hall who has previously sent out a volume of pleasing rhymes. These are marked by much delicacy of feeling and expression, and a lively sense of humor. The book is printed in unique type, on deckle edge paper, and each page has a border design, two colors alternating throughout the book. There are also numerous illustrations and a decorative little page. The book is bound in green silk, with dainty cover design stamped in white, red, and gold with gilt top, and there is also a white edition, stamped in red, green, and gold. (E. R. Herrick & Company, 70 Fifth avenue, New York. \$1.50.)

There is material for many a good story in those mountainous and out-of-the-way places in which illegal distillation is carried on. Some incidents in relation to such a life are woven into a tale by Will Allen Dromgoole, which is called *The Moonshiner's Son*. Among the odd and interesting people that belong to this region were the Jarvises, whose doings are described in these

pages. A contest with the officers is one of the exciting incidents of the book. Illustrations were furnished by F. A. Carter. (The Penn Publishing Company.)

A story that will not fail to stir the depths of emotion in the reader has been given to the world by Elizabeth Glower in *Jefferson Wildrider*. The plot is simple, yet its details are worked out with consummate skill. The characters of Jefferson, the brilliant, faithless lover who elopes to marry a rival; the silent, relentless hatred of Lois; the faithfulness of Ralph Blair, Lois' rejected suitor, and the other features of the story, are presented with a dramatic intensity seldom equaled. (The Baker & Taylor Company, New York.)

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Interesting Notes.

How to Make Books Durable.

A study of paper-making, with a view of ascertaining the relative durability of different kinds of paper has been made by the English Society of Arts. While books have come down to us from the middle ages in a perfect condition, modern books become discolored and disintegrate; both these faults are caused by the way the wood pulp is treated. Book paper should be sized with a minimum quantity of rosin; the presence of starch is objectionable; care must be taken that paper should contain a minimum of chlorides; ten per cent. of total mineral constituents is the outside of what can be allowed in papers for publishing.

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Ice-breakers for Opening Northern Ports.

Admiral Makaroff, of the Russian navy has great faith in ice-breakers as aids in keeping ice-bound ports open in winter. His idea of an ice-breaker has been put into concrete form by the Armstrong ship-building firm of England, and it will be used this winter to keep the port of St. Petersburg open to navigation. If it succeeds, the intention is to use it next summer to clear the way for a commercial fleet that will sail from the Atlantic into Arctic waters for the Yenisei river, Siberia.

It is said that this ice-breaker is built somewhat on the plan of those used in some of the Baltic ports of Germany. They are very heavy oval shaped steel boats with the front curved gradually upward. They run up on the ice and break it with their weight. Makaroff believes that an ice-breaker, weighing 20,000 tons built on his model could break its way to the north pole.

Clocks without Hands and Faces.

In Switzerland they are making clocks which do not need hands and faces. The clock merely stands in the hall, and you press a button, when, by means of phonographic internal arrangements, it calls out the time.

The Swastika.

A cross with four arms has been found on many ancient objects—it is termed the

Swastika which means happiness or good fortune in the Sanscrit. It is found on common clay amulets that were suspended round the neck. Also on the golden diadems found in the ruins of Troy which was destroyed 1200 B. C. This was to the ancients what the horseshoe is to many ignorant people now-a-days. This sign is found in ancient Persian books, on the temples of India on vases of elegant form from Athens. It is found in the catacombs in Rome, on the most ancient monuments in Ireland, on metals found on the coast of Guinea. It is engraved on the temples of Yucatan, on vases from a Peruvian sepulcher, on vessels from the pueblos of New Mexico, on a stone hammer found in New Jersey. It is called the sacred symbol of the Aryan race. The figure shows the cover of a vase found in Troy by Dr. Schlieman.

The Malay Race.

The name Malay is given in a restricted sense to the inhabitants of the Malay peninsula, but in its wider sense to a great branch of the human family dwelling not in the peninsula mentioned, but in the islands, large and small of the Indian archi-

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need not lose flesh in summer if you use the proper means to prevent it. You think you can't take SCOTT'S EMULSION in hot weather, but you can take it and digest it as well in summer as in winter. It is not like the plain cod-liver oil, which is difficult to take at any time.

If you are losing flesh, you are losing ground and you need

Scott's Emulsion

and must have it to keep up your flesh and strength. If you have been taking it and prospering on it, don't fail to continue until you are thoroughly strong and well.

Soc. and \$1.00, all druggists.
SCOTT & BOWNE, Chemists, New York.

When Cupid Calls is a book of smooth,—yes, unusually fine—society verse by Tom Hall who has previously sent out a volume of pleasing rhymes. These are marked by much delicacy of feeling and expression, and a lively sense of humor. The book is printed in unique type, on deckle edge paper, and each page has a border design, two colors alternating thruout the book. There are also numerous illustrations and a decorative little page. The book is bound in green silk, with dainty cover design stamped in white, red, and gold with gilt top, and there is also a white edition, stamped in red, green, and gold. (E. R. Herrick & Company, 70 Fifth avenue, New York. \$1.50.)

There is material for many a good story in those mountainous and out-of-the-way places in which illegal distillation is carried on. Some incidents in relation to such a life are woven into a tale by Will Allen Dromgoole, which is called *The Moonshiner's Son*. Among the odd and interesting people that belong to this region were the Jarvises, whose doings are described in these

pages. A contest with the officers is one of the exciting incidents of the book. Illustrations were furnished by F. A. Carter. (The Penn Publishing Company.)

A story that will not fail to stir the depths of emotion in the reader has been given to the world by Elizabeth Glower in *Jefferson Wildrider*. The plot is simple, yet its details are worked out with consummate skill. The characters of Jefferson, the brilliant, faithless lover who elopes to marry a rival; the silent, relentless hatred of Lois; the faithfulness of Ralph Blair, Lois' rejected suitor, and the other features of the story, are presented with a dramatic intensity seldom equaled. (The Baker & Taylor Company, New York.)

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THE
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NEW YORK AND CHICAGO.

[Entered at the N. Y. P. O. as second-class matter.]

Published Weekly by
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267-269 WARASH AVE., CHICAGO.

THE SCHOOL JOURNAL, established in 1870, was the first weekly educational paper published in the United States. During the year it published twelve school numbers, fully illustrated, of from forty-four to sixty pages each, with cover, a summer number (eighty-eight pages) in June, a private school number in September, a Christmas number in November, and four traveling numbers in May and June. It has subscribers in every state and in nearly all foreign countries.

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Ice-breakers for Opening Northern Ports.

Admiral Makaroff, of the Russian navy has great faith in ice-breakers as aids in keeping ice-bound ports open in winter. His idea of an ice-breaker has been put into concrete form by the Armstrong ship-building firm of England, and it will be used this winter to keep the port of St. Petersburg open to navigation. If it succeeds, the intention is to use it next summer to clear the way for a commercial fleet that will sail from the Atlantic into Arctic waters for the Yenisei river, Siberia.

It is said that this ice-breaker is built somewhat on the plan of those used in some of the Baltic ports of Germany. They are very heavy oval shaped steel boats with the front curved gradually upward. They run up on the ice and break it with their weight. Makaroff believes that an ice-breaker, weighing 20,000 tons built on his model could break its way to the north pole.

Clocks without Hands and Faces.

In Switzerland they are making clocks which do not need hands and faces. The clock merely stands in the hall, and you press a button, when, by means of phonographic internal arrangements, it calls out the time.

The Swastika.

A cross with four arms has been found on many ancient objects—it is termed the

Swastika which means happiness or good fortune in the Sanscrit. It is found on common clay amulets that were suspended round the neck. Also on the golden diadems found in the ruins of Troy which was destroyed 1200 B. C. This was to the ancients what the horseshoe is to many ignorant people now-a-days. This sign is found in ancient Persian books, on the temples of India on vases of elegant form from Athens. It is found in the catacombs in Rome, on the most ancient monuments in Ireland, on metals found on the coast of Guinea. It is engraved on the temples of Yucatan, on vases from a Peruvian sepulcher, on vessels from the pueblos of New Mexico, on a stone hammer found in New Jersey. It is called the sacred symbol of the Aryan race. The figure shows the cover of a vase found in Troy by Dr. Schlieman.

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and must have it to keep up your flesh and strength. If you have been taking it and prospering on it, don't fail to continue until you are thoroughly strong and well.

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SCOTT & BOWNE, Chemists, New York.

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125 rooms, \$3.50 per day. 125 rooms, \$4.00 per day
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125 rooms, \$1.50 per day. 125 rooms, \$2.00 per day.
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Steam Heat included.

L. U. MALTBY, Proprietor.

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A Newspaper Without Type.

A prominent Brussels paper, *Petit Bleu*, during a recent strike of compositors and pressmen, came out as a richly illustrated sixteen-page paper without the help of a single compositor. The way it was done is this: The news was "set up" on a typewriter. The single typewritten sheets and pictures were pasted on a large cardboard corresponding in proportions to the size of the newspaper. Then the whole was reduced by photography to the actual size, and from the negative a print was made on a sensitized sheet of zinc. With the aid of nitric acid the type and illustrations were etched in, and the result was a complete solid form ready for the press.

Silk Made from Gelatine.

Consul Frankenthal, at Berne, Switzerland, sends to Washington a report on the manufacture of artificial silk from gelatine by Prof. Hummel, of Leeds, England. The gelatine to be turned into silk is heated at a certain temperature, which keeps it continually in liquid form. The reservoir containing this liquid has a cover with many small openings thru which the gelatine oozes in very fine streams. These tiny threads are discharged on an endless strip of linen cloth running over pulleys. When the strip has traveled far enough to dry the gelatine the threads are picked up automatically and wound upon spools.

To make the gelatine threads proof against being dissolved in warm water or in any other solution, they are lightly wound on drums and subjected to the fumes of formaldehyde in a close room for several hours. Coloring matter added to the liquid gelatine produces any shade of thread desired. This artificial silk is said to be extremely brilliant and very uniform in thickness.

The strength of the threads may be increased by mixing the gelatine fiber with real silk, fine linen, or cotton. The statement is made that this silk can be produced at \$1.15 per pound. Collodion silk now costs about \$2.50 per pound, while natural silk is worth \$6.25.

Some Prolific Writers.

The most prolific author of the present day is G. A. Henty, who has been writing since the early fifties. He has produced a dozen novels and books of travel and more than fifty delightful books for boys. M. Jules Verne nearly equals him in the amount of work turned out. He claims to have written over seventy books. Miss Bradden has written scores of books and Marion Crawford has produced on an average two books a year for sixteen years.

Improvement in the Microscope.

The microscope, as constructed heretofore, only allowed the inspection of even surfaces, and its focus was so limited that objects of any thickness had to be first prepared between glass plates or upon a flat surface to become visible at all. An American living in Paris has constructed a microscope with lenses so arranged that they will permit the inspection of uneven surfaces. In order to make the vision more perfect, two systems of lenses are

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Is the best—in fact the One True Blood Purifier. Sold by all druggists. \$1; six for \$5.

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In flat, oval bottles only, dated. See that our name appears on bottle as agent. Explanatory pamphlets mailed free.

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* Beware of Base imitations. \$1,000 Reward for arrest and proof of any one selling the same.

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-Don't refuse all-

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to use SAPOLIO: It is a solid cake of scouring soap, used for cleaning purposes.



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Cutting Stones with the Diamond Saw. The diamond saw for cutting stone is aiding the erection of buildings for the Paris exposition of 1900. This saw is a steel disk about six feet in diameter in which the cutting teeth, common crystals worth about \$1.25 a carat, are fixed in the edge. For sawing hard stones the cutting edge has two hundred diamonds, and the speed is three hundred turns a minute. These saws cut and dress the stones on all sides, and do it at from one-eighth to one-tenth the cost of hand labor.

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The custom house at Ancomarca, Peru, 16,000 feet above the sea level, is the highest inhabited spot in the world.

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The fourth of the present series of Pennsylvania Railroad three-day personally-conducted tours to Washington, D. C., will leave Tuesday, March 28. The rate, \$14.50 from New York, \$11.50 from Philadelphia, and proportionate rates from other points, include all necessary expenses during the entire trip—transportation, hotel accommodations, and Capitol guide fees. An experienced Chaperon will also accompany the party.

For itineraries, tickets, and full information apply to ticket agents; Tourist Agent, 1196 Broadway, New York; 789 Broad street, Newark, N. J.; or address Geo. W. Boyd, Assistant General Passenger Agent, Broad Street Station, Philadelphia.

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Teachers earn big money introducing our \$15. Soda fountain. Don't fail to investigate this at once. Griffith & Co., 337 Liberty avenue, Pittsburg, Pa.

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A—all the nerves gone on a bender,
N—ot an organ is exempt;
T—eeth and scalp and muscles tender,
I—cy chills the bones pre-empt;
K—aleidoscopic are the changes,
A—s the symptoms come and go;
M—icrobe thru us sports and ranges,
N—ought but ache from top to toe.
I—is there nothing that will cure?
A—N—T—I—K—A—M—N—I—A, to be sure!

Southern Railway. New train to the South and Southwest.

March 12, 1899, the Southern Railway in connection with the Pennsylvania R. R., daily, will inaugurate a new passenger train from New York, leaving New York 2:50 P. M., to Charlotte, Columbia, Aiken, Augusta, Savannah, Brunswick, Jacksonville and Tampa with immediate connections at Jacksonville with "the Miami Limited" on the Florida East Coast Railway for St. Augustine, Palm Beach, Miami, Key West, Nassau, and Havana. This train will be known as the "New York and Florida Express" and "Washington and Chattanooga Limited."

During the Teething Period.

Mrs. WINSLOW'S SOOTHING SYRUP has been used for over FIFTY YEARS by MILLIONS of MOTHERS for their CHILDREN WHILE TEETHING, with PERFECT SUCCESS. It SOOTHES the CHILD, SOFTENS the GUMS, ALLAYS all PAIN, CURES WIND COLIC, and is the best remedy for DIARRHEA. Sold by Druggists in every part of the world. Be sure to ask for "Mrs. Winslow's Soothing Syrup," and take no other kind. Twenty-five cents a bottle.

DINNER SET FREE

(Decorated or White, 112 and 126 Pieces.)

OR

GOLD WATCH

WITH ONLY 30 POUNDS OF OUR CELEBRATED

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SPECIAL OFFER THIS MONTH.

This Tea is packed in 1-pound Decorated TIN Canisters to preserve the rich, fine, delicate flavor and great strength. Warranted to suit all tastes.

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Legibility, that first great requisite in any handwriting, is obtained by using the simplest and most natural forms of letters.

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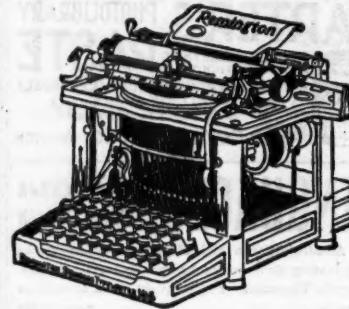
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